

CLAIMS:

1. A mobile communication terminal comprising:

5 a processor unit being configured to control said communication terminal,

10 an electronic memory having music data stored thereon, said music data including at least a first and a second message type, the first type messages containing information for notes to be played, the second type messages containing other music related information for the mobile communication terminal,

15 a loudspeaker connected to a sound generator configured for generating audio waveforms in accordance with the information in the first type messages,

20 a plurality of lights that can be activated by the processor, and

25 the processor unit being configured by the information in second type messages to activate the lights based on the information contained in the first type messages.

2. A mobile communication terminal according to claim 1, wherein the second type messages contain data mapping the activation of the lights to the notes in the first type message.

3. A mobile communication terminal according to claim 2, wherein the first type messages comprise note-on events and note-off events, and said processor unit is configured to use the last event when one light or one

light group is mapped to one or more notes at the same time.

4. A mobile communication terminal according to any of
5 claims 1 to 3, in which the lights are distributed over a plurality of different locations of the terminal, and the second type messages contain data mapping the location of the lights to be activated to the notes in the first type message, and the processor unit being configured to
10 activate lights at locations in accordance with the information in the second type messages.

5. A mobile communication terminal according to any of claims 1 to 4, comprising lights in a plurality of
15 different colors, the second type messages containing data mapping the color of the lights to be activated to the notes in the first type message and the processor unit being configured to activate lights with the color in accordance with the data in the second type messages.

20 6. A mobile communication terminal according to any of claims 1 to 5, wherein the second type messages contain data mapping the intensity or intensity profile of the lights to be activated to the information in the first type message, and the processor unit being configured to
25 activate lights with the intensity in accordance with the mapping data in the second type messages.

7. A mobile communication terminal according to claim 6,
30 wherein the first type messages contains the velocity of the notes, and the intensity of the light to be activated is mapped to the velocity of the notes concerned.

8. A mobile communication terminal according to any of
35 claims 1 to 7, wherein the second type messages contain data mapping the location of the lights to be

activated to the notes in the first type message, and the processor unit being configured to activate lights at locations in accordance with the information in the second type messages.

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9. A mobile communication terminal according to any of claims 1 to 8, wherein the second type message contains data mapping the activation of groups of lights to be activated simultaneously to the note information in the first type messages, and the processor unit being configured to activate the groups of lights in accordance with the data in the second type messages.

10. A mobile communication terminal according to claim 9, wherein a group of lights to be activated comprises a plurality of lights arranged in a recognizable pattern.

11. A mobile communication terminal according to any of claims 1 to 10, wherein said music data is arranged in a number of channels and the first type messages are assigned to one of the channels, and first type messages assigned to one specific channel used for the activating the lights.

12. A mobile communication terminal according to claim 11, wherein the volume setting for the channel used for activating the lights is set to zero to create a dedicated light activation channel.

13. A mobile communication terminal according to any of claims 1 to 12, wherein the mapping comprises a function whose arguments comprise the note number.

14. A mobile communication terminal according to claim 13, wherein a first parameter is added or subtracted from

the note number and the result is integer and/or modulo divided by a second parameter in the function.

15. A mobile communication terminal according to claim 13
5 or 14, wherein the function reduces the number of available notes to the number of available light locations.

16. A mobile communication terminal according to any of
10 claims 13 to 15, wherein the function reduces the number of available notes to the number of available light colors.

17. A mobile communication terminal according to any of
15 claims 13 to 16, wherein the mapping comprises a random function.

18. A mobile communication terminal according to any of
claims 1 to 17, wherein the mapping comprises a look up
20 table.

19. A mobile terminal according to any of claims 1 to 18,
wherein the terminal comprises a vibrator, a flashlight and/or a camera flash and the processor being configured
25 by second type message to activate the vibrator flashlight and/or camera flash based on the information contained in the first type messages.

20. A mobile communication terminal according to any of
30 claims 1 to 19, further comprising an editor application enabling a user to create and/or edit the second type messages.

21. A mobile communication terminal according claim 20,
35 wherein the editor application enables the user to select

the channel to be used, to select the patterns to be activated, and/or to modify the function.

22. A mobile communication terminal according claim 20 or
5 21, wherein the terminal comprises different ranges of lights, and the editor application enables the user to select the range.

23. A mobile communication terminal according claim 20 to
10 22, wherein the editor application enables the user to map the intensity to the velocity, to a given fixed parameter, or to a random number.

24. A mobile terminal according to any of claims 20 to
15 23, wherein the editor application enables the user to edit the music data contained in the first type messages to add, delete or change notes and note related information.

20 25. A mobile terminal according to any of claims 1 to 24, wherein the music data is a MIDI sequence or file, preferably in the SP-MIDI format.

25 26. A mobile terminal according to claim 25, wherein the second type messages are System Exclusive Messages and the first type messages are channel voice messages, preferably NOTE ON and NOTE OFF messages.

27. A method for controlling the activation of lights of
30 a mobile communication terminal configured to play music from music data including at least a first and a second message type, the first message type containing information for notes to be played, the second message type containing other information for the device that is
35 to reproduce the music, comprising the step of placing in the second type messages data mapping the activation of

the lights to the note information contained in the first type messages.

28. A method according to claim 27, wherein data mapping the position of lights to be activated is placed in the second type messages.

29. A method according to claim 27 or 28, wherein data mapping the color of lights to be activated is placed in the second type messages.

30. A method according to any of claims 27 to 29, wherein data mapping the intensity of lights to be activated is placed in the second type messages.

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31. A method according to any of claims 27 to 30, wherein data mapping the simultaneous activation of groups of lights to be activated, preferably groups of lights arranged in recognizable patterns is placed in the second type messages.

32. A method according to any of claims 27 to 31, wherein a function whose arguments include the note number is placed in the second type messages.

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33. A method according to claim 32, further comprising the step of adding or subtracting a first parameter from the note number and integer and/or modulo dividing the result by a second parameter.

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34. A method according claim 32 or 33, wherein the function reduces the number of available notes to the number of available light locations.

35. A method according any of claims 32 to 34, wherein the function reduces the number of available notes to the number of available light colors.

5 36. A method according any of claims 32 to 35, further comprising the step of applying a random function in the mapping.

10 37. A method according any of claims 27 to 31, further comprising the step of using a look up table for the mapping.

15 38. A method according any of claims 27 to 37, wherein the music data is a MIDI sequence or file, preferably in the SP-MIDI format.

39. A method according to claim 38, wherein the second type messages are System Exclusive Messages.

20 40. A method according to any of claims 27 to 39, wherein one or more second type messages are placed in the beginning of the music data file or sequence for initializing the mapping.

25 41. A method according to claim 40, in which further second type messages are placed later on in the music data file or sequence for changing the mapping, the second type messages preferably being all located within one track.

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42. A computer terminal comprising:

a processor unit controlling the terminal,

35 a user interface comprising a keyboard and a display,

an electronic memory having music data stored thereon, said music data including at least a first and a second message type, the first type messages containing information for notes to be played, the second type messages containing information for mapping the activation of lights on a mobile communication terminal to the note information in the first type messages,

a loudspeaker connected via an amplifier to a sound generator capable of generating audio waveforms in accordance with the music data, and

an application for creating and/or modifying the second type messages.

43. A computer terminal according to claim 42, wherein the application is configured to emulate the activation of the lights of a mobile terminal on the display of the computer terminal.

44. A computer terminal according to claim 42, wherein the application is configured for controlling lights of a mobile communication terminal connected thereto for allowing the testing of the activation of the lights directly on the mobile communication terminal.

45. A music data sequence or file for use on a mobile communication terminal, said music data file containing at least:

first type messages with note information, and

second type messages mapping the activation of lights of a mobile communication terminal to the

note information contained in the first type messages.

46. A music data sequence or file according to claim 45,
5 wherein the first type messages contain information mapping the activation of lights to the note-on commands, and information mapping the deactivation of lights to note-off commands.

10 47. A music data sequence or file according to claim 45 or 46, wherein the first type messages contain velocity information associated with a note-on command, and the second type messages contain information mapping the intensity of a light to be activated to the velocity
15 information.

48. A music data sequence or file according to any of claims 45 to 47, wherein the first type messages contain the note number associated with a note-on or note-off
20 command, and the second type messages contain a function whose arguments comprise the note number.

49. A music data sequence or file according to claim 48, wherein the function reduces the range of note numbers to
25 the range of light locations on the mobile communication terminal.

50. A music data sequence or file according to claim 49, wherein the function reduces the range of note numbers to
30 the range of light colors on the mobile communication terminal.

51. A music data sequence or file according to any of claims 45 to 50, wherein the music data or sequence is in
35 a MIDI format, preferably the SP-MIDI format.

52. A music data sequence or file according to claim 51, wherein the second type messages are system exclusive messages.

5 53. A music data sequence or file according to any of claims 45 to 52 stored in a computer medium.